## REMARKS/ARGUMENTS

### Status of Claims

Claims 1-28 are pending in the application. Applicants elected group I, namely claims 1-13, for prosecution. Claims 14-28 have been withdrawn. Claims 3, 6, 10 and 11 read upon non-elected species while claims 1, 2, 4, 5, 7-9 and 12-13 are under examination. The Examiner regards claim 13 as being withdrawn. However, Applicants submit that claim 13 belongs to the elected restriction group I and does not appear to relate to any of the species the Examiner discussed. Should claim 13 be regarded as belonging to a restricted species, Applicants respectfully request clarification.

Applicants submit that claim 1 has been amended to further define the separation matrix (i.e., the separation matrix enables adsorption of antibodies at low ionic strength at pH values around neutral). Support for the amendment can be found in the specification, see paragraph 15 of the published US patent application. No new matter has been introduced.

### Double Patenting

Claims 1, 2, 4, 5, 7-9 and 12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims of co-pending application number 11/570,530 in view of Muller (U.S. Patent No. 5,453,186). Applicants submit herewith a Terminal Disclaimer with required fee, which shows the conflicting patent is commonly owned with this application thus overcoming

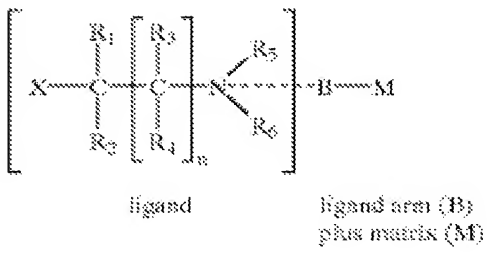
this rejection.

**Substantive rejections**

Claims 1, 2, 4, 5, 7-9 and 12 stand rejected as being either anticipated or as obvious over Berglund (US6090288 - incorrectly cited as US5090288 by the Examiner). Applicants respectfully disagree.

Applicants submit that Berglund teaches anion exchangers with a general ligand structure according to Formula I:

FORMULA I




where R1-R6 are hydrogen or hydrocarbon groups where the carbon chain can be disrupted by amino nitrogen(s) or sulphonamide -SO2NH- (col 4, lines 5-10, col 4, lines 21-33, col 6, lines 18-21).

Applicants submit that sulfonamide groups do not have any positive charge (in fact, they get negatively charged at high pH; See text book excerpt from: Introduction to Organic Chemistry, Streitwieser A. and Heathcock C.H., MacMillan Publishing Co., 1976, pp789-790). Thus sulfonamide groups are not anion exchange ligands by themselves. Hence Berglund is not applicable. Further, the application teaches away from ion exchangers in the background section (p 2, lines 19-23). In relation to claims 7-9

(polyamines), R1-R6 are max 10 atoms in length in Berglund (col 4, lines 35-37). In contrast, there is a 14 atoms chain with triethylenetetramine, and certainly more than 10 atom chain with polyethylenimine. Regarding claim 4 (methyl), Applicants submit that a -NH-SO2-CH3 methylsulfonamide can not be called a carbon chain disrupted - a methyl group is not a chain. As such, Applicants respectfully submit that claims 1, 2, 4, 5, 7-9 and 12 are not anticipated or obvious over Berglund.

Claims 4 and 9 stand rejected under 35 U.S.C. §103(a) as obvious over Berglund in view of Muller. Applicants respectfully disagree.

Berglund has been discussed above. Applicants submit that Muller teaches separation media with grafted polymers. The grafted polymers contain recurring units of formula -CR'R"-CR1Y-, where Y can be -CH2NR2R3 and R2 and R3 are alkyl groups that can be substituted with sulfonyl radicals (col 1, lines 15-40). Sulfonylmethyl-, sulfonylethyl- etc. groups are mentioned in col 5, lines 24-28, although this seems to be in the context of sulfonic acid groups (col 5, lines17-19). The passages cited by the examiner are col 4, lines 60-61 – which teach that X bound to a carbonyl carbon can be -NR2R3, col 5, lines 4-10 – which teach that R2 and R3 can be sulfonylalkyl and col 5, lines 47-56 - which teach that R2 and R3 can be phenyl groups substituted with sulfonic acids or sulfonylalkyls. These passages cannot be interpreted as aliphatic sulfonamide ligands because if the -NR2R3 nitrogen is bound to a carbonyl it is an amide nitrogen and it cannot simultaneously be a sulfonamide nitrogen and if R2 or R3 is a substituted phenyl it becomes an aromatic ligand. Applicants submit that Muller never mentions sulfonamides. The mentioning of sulfonylmethyl in Muller col 5, line 24 is part of a

preferred embodiment where the -NR2R2 group is bonded to a carbonyl. In this case it is a carboxyl amide and cannot simultaneously be a sulfonamide. Further, as discussed above, the Y structure could not be interpreted as encompassing sulfonamides. Regarding claim 4 (methyl), Muller in col 5, lines 17-19 teaches sulfonic acids and not sulfonamides. Applicants submit that claims 4 and 9 are not obvious over Berglund in view of Muller.

Claims 1, 2, 4, 5, 7-9 and 12 are also rejected as obviousness over Yamamoto (US4725355) in view of Muller and a Wikipedia citation. Applicants respectfully disagree.

Applicants submit that Yamamoto teaches body fluid purification where immunoglobulins are adsorbed on sulfa drugs ("also called a sulfonamide") of formula H2N-R1a-Ph-SO2NH-R2 (with an aromatic ring bound to the sulfur) and exemplified by a list of aromatic sulfonamides. With regard to claim 1, as the Examiner stated, Yamamoto does not mention any sulfonamides wherein an R group of the sulfonyl is an aliphatic compound. In addition, Applicants submit that Yamamoto does not teach that the R group is methyl (claim 4), nor does it mention polyamines (claims 7-9), nor does it teach the ligands as aliphatic compounds (claim 12). Thus, Yamamoto only teaches aromatic sulfonamides.

The Wikipedia posting cited by the Examiner contains the sentence "In medicine, the term "sulfonamide" is sometimes used as a synonym for sulfa drug, a derivative or variation of sulfanilamide". This cannot be read to imply that any sulfonamide can be called a sulfa drug. It actually specifies that a sulfa drug is a derivative or variation of

sulfanilamide - an aromatic sulfonamide of structure H2N-Ph-SO2NH2. The sulfanilamide structure agrees perfectly well with the Yamamoto formula for the case where a is 0 and R2 is hydrogen. Sulfanilamide is also listed as an example in Yamamoto. Applicants submit that the obvious interpretation of the Wikipedia sentence is that sulfa drugs are aromatic sulfonamides. Applicants also submit that the Wikipedia posting cited by the Examiner was modified June 27, 2009 which was more than 5 years after the priority date. Further, Wikipedia is open for modification by the public, and its reliability has been questioned many times.

Applicants submit that the claims rejected of claims 1, 2, 4, 5, 7-9 and 12 as being obviousness over Yamamoto in view of Muller and Wikipedia citation should be withdrawn.

Applicants assert that the claims are in allowable form and earnestly solicit the allowance of claims 1-13.

Early and favorable consideration is respectfully requested.

Respectfully submitted,

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